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Steve Bryson

May 1996 **Communications of the ACM**, Volume 39 Issue 5

Publisher: ACM Press

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2 [Research directions in virtual environments: report of an NSF Invitational Workshop.](#)



March 23-24, 1992, University of North Carolina at Chapel Hill

Gary Bishop, Henry Fuchs

August 1992 **ACM SIGGRAPH Computer Graphics**, Volume 26 Issue 3

Publisher: ACM Press

Full text available: pdf(2.33 MB) Additional Information: [full citation](#), [citations](#), [index terms](#)

3 [Adding force feedback to graphics systems: issues and solutions](#)



William R. Mark, Scott C. Randolph, Mark Finch, James M. Van Verth, Russell M. Taylor

August 1996 **Proceedings of the 23rd annual conference on Computer graphics and interactive techniques SIGGRAPH '96**

Publisher: ACM Press

Full text available: pdf(199.79 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: force feedback, friction model, haptic, interactive graphics, intermediate surface representation, scientific visualization, virtual environment, virtual world

4 [Applications: Exploring virtual ecosystems](#)



Antão Vaz Almada, António Eduardo Dias, João Pedro Silva, Emanuel Marques dos Santos, Pedro José Pedrosa, António Sousa Câmara

May 1996 **Proceedings of the workshop on Advanced visual interfaces AVI '96**

Publisher: ACM Press

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 Ott, R.; Gutierrez, M.; Thalmann, D.; Vexo, F.;
[Intelligent Vehicles Symposium, 2005. Proceedings. IEEE](#)
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- ☐ 2. **A multi-threaded approach for deformable/rigid contacts with haptic feed**
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- ☐ 3. **Finite element methods for real-time haptic feedback of soft-tissue model reality simulators**
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- ☐ 4. **A virtual environment with haptic feedback for the treatment of motor disabilities**
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- ☐ 5. **Dynamic simulation of virtual mechanisms with haptic feedback using in equipment**
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| L5 | 22 | (virtual adj object) and (simulat\$5 adj hand) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2007/01/11 14:29 |
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| L7 | 0 | (rigid adj object) with (simulated adj hand) | USPAT | OR | OFF | 2007/01/11 14:34 |
| L8 | 13 | (rigid adj object) and (virtual adj3 environment) | USPAT | OR | OFF | 2007/01/11 14:34 |
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| L12 | 934 | ((715/701,702,757,706) or (703/6)).CCLS. | USPAT | OR | OFF | 2007/01/11 15:09 |
| L13 | 44 | 12 and (virtual adj object) | USPAT | OR | ON | 2007/01/11 15:18 |
| L14 | 890 | 12 not 13 | USPAT | OR | ON | 2007/01/11 15:18 |
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JF **Kramer** - US Patent 6,979,164, 2005 - Google Patents

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... available as a geometric model, we can **hand** the combined ... 3D occlusion relationships between real and **virtual** objects ... the Z-buffer of the **graphics** hardware with ...

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[TeleSign: a sign language telecommunication system - group of 3 »](#)

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... been done on basic personal computers with VGA **graphics**. ... that will include the signer's **hand** geometry and ... and the type, speed, and **graphic** capabilities of ...

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KL Petrich, JS Vargas, J Wagner, M Yim, JF **Kramer** - US Patent 6,104,379, 2000 - Google Patents

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System, method and data structure for simulated interaction with graphical objects - group of 2 »

... , HJC DesRosiers, D Gomez, JF **Kramer**, J Tian, M ... - US Patent 7,050,955, 2006 - Google Patents

... infor- m e (or contacting) **virtual** object (such as a **graphical hand**) mation about the state of synchronization of various graphs. ...

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... Final **graphical** interface of ... On the other **hand**, it should allow easy switching between ...

The concept of **virtual** instrumentation allows higher productivity in ...

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